WHERE AND WHEN DID THE BORODINO METEORITE FALL?

A. A. Yavnel'

Translation of "Gde i Kogda Upal Meteorit Borodino?",
In: Priroda, No. 7, July 1973,
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16. Abstract

The article deals with clarification of details surrounding the discovery of the so-called Borodino meteorite, and concludes that, judging by the nature of its composition, this meteorite could not have been a portion of any known fall of meteoritic rain.

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WHERE AND WHEN DID THE BORODINO METEORITE FALL?

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Several years ago, an article with almost the same title was published in /102* "Priroda" by A. K. Stanyukovich [1]. The author set as his goal the determination of the place where the Borodino stony meteorite fell. According to the data in modern catalogs, this meteorite fell at 1 o'clock in the morning on the 5th of September, 1812, in the vicinity of the village of Borodino which is located on the banks of a stream known as the Stonets, among the positions of the Russian troops, and was given by a sentry to his commander. In the Russian literature about it, a brochure was published in 1892 by the famous student and collector of meteorites, Yu. I. Simashko. In this publication he stated that he received the meteorite from a descendant of this company commander, Major Christian Ivanovich Dietrichs.

As a result of a search through the archives, A. K. Stanyukovich found only Major-Gunner Didrig,-- who took part in the battle of Borodino, and whose battery was located on the banks of the Stonets near the village of Gorki. However, a note was published somewhat earlier on this topic by the geologist A. M. Viktorov [2]. In response to this note of A. M. Viktorov, several letters[1] were received from the great-grandson of Major Dietrichs. From these letters, it finally became clear that both A. M. Viktorov and A. K. Stanyukovich had repeated the same error which had been made 80 years ago by Yu. M. Simashko [sic].

The fact is that in the British Museum (London) a letter written by Yu. I. Simashko dated 20 June 1892 is preserved in which he spells out several

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[1]All correspondence and other materials dealing with this problem have been kindly sent by A. M. Viktorov to the Committee on Meteorites of the Academy of Sciences of the USSR.

*Numbers in the margin indicate pagination in the foreign text.

items of information that he had included previously in his brochure. In this letter, Simashko mentions the location of the battery of Major Dietrichs, in accordance with the data mentioned above by A. M. Viktorov and A. K. Stanyukovich. It turns out that the meteorite fell into the hands of Simashko from the steward of one of Dietrichs' descendants, Gerke. On the basis of a number of documents that were found, it was determined that Major Dietrichs, the commander of the battery at the village of Gorki, was not named Christian Ivanovich, but Aleksandr Ivanovich.

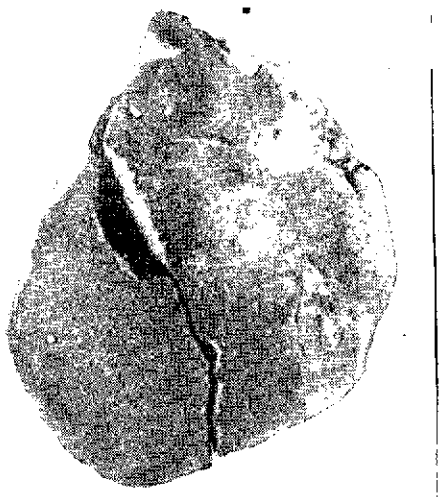
The error made by Simashko and his followers is simply explained by the fact that they were looking for Major Dietrichs and not Christian Ivanovich Dietrichs who apparently was a General-Lieutenant. And although C. I. Dietrichs also participated in the campaign of 1812, it is not known where he was during the battle of Borodino and how he got hold of the meteorite. But the steward Gerke, who told all this history to Simashko, obviously had no idea of Dietrichs' rank (which is no surprise) and therefore was all mixed up.

It is necessary to recognize that the exact point where the Borodino meteorite fell is still not known. It is also unclear where the exact date and time of the fall of the meteorite came from -- 1 o'clock in the morning on the 5th of September 1812, first mentioned by the American meteorite researcher O. Farington in his catalog (1916).

Most of the meteorite, weighing 308 g, was obtained in 1890 from the same Gerke by the Institute of Mines in St. Petersburg and was kept in the collection of its Museum until 1939.

In the Committee on Meteorites of the USSR Academy of Sciences there is a document signed in his own hand by the former scientific secretary of the committee, L. A. Kulik, which states that on the 11th of January 1939 with his participation, the Borodino was broken apart at the Museum of Mines and fell into five pieces. Half of the meteorite was then transferred to the USSR Academy of Sciences where it is kept in the collection of the Committee on Meteorites. A portion of the meteorite substance was used for various tests, particularly to determine the chemical composition of the meteorite (V. Ya. Kharitonova) and its structure (L. G. Kvasha). It belongs to the

bronzite chondrites with a high iron content. L. K. Levskiy determined the content of rare gases in it and found that the Borodino is different from many meteorites of this type in that it has a high content of "primary" gases, captured from the surrounding medium during the period of its formation. From this difference it follows that the Borodino meteorite cannot be part of any known fall of meteoritic rain.



Assembled Pieces of That Part of the Borodino Meteorite Which Was Kept Intact Until 1939 at the Museum of Mines in Leningrad.

In order to restore the initial external appearance of the meteorite, the author this year once again briefly "united" the Leningrad and Moscow fragments of the meteorite and photographed them together (see the figure). The meteorite has an angular appearance and a surface which is covered on all sides by a molten crust, from which it may be concluded that this sample of the meteorite is a portion of a group fall.

This is the primary factual material concerning the fall of the meteorite which happened to coincide with an important moment in the history of our nation. Perhaps readers can provide us with some further information about this phenomenon, basing it on historical sources.

REFERENCES

1. Stanyukovich, A. K., "Where Did The 'Borodino' Meteorite Fall?", *Priroda*, No. 6, 1969.
2. *Nedelya*, No. 51, 1967.

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